



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2017-0715; Product Identifier 2017-NM-073-AD]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for certain The Boeing Company Model 737-200, -200C, -300, -400, and -500 series airplanes. This AD was prompted by an evaluation by the design approval holder (DAH) indicating that the fuselage crown skin panels are subject to widespread fatigue damage (WFD). This proposed AD would require repetitive inspections, replacement, and applicable on-condition actions for certain fuselage crown skin panels. We are proposing this AD to address the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Standards Branch, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0715.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0715; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Jennifer Tsakoumakis, Aerospace Engineer, Airframe Section, FAA, Los Angeles Aircraft Certification Office (ACO) Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5264; fax: 562-627-5210; email: Jennifer.tsakoumakis@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section.

Include “Docket No. FAA-2017-0715; Product Identifier 2017-NM-073-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. We will consider all comments received by the closing date and may amend this NPRM because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

Fatigue damage can occur locally, in small areas or structural design details, or globally, in widespread areas. Multiple-site damage is widespread damage that occurs in a large structural element such as a single rivet line of a lap splice joining two large skin panels. Widespread damage can also occur in multiple elements such as adjacent frames or stringers. Multiple-site damage and multiple-element damage cracks are typically too small initially to be reliably detected with normal inspection methods. Without intervention, these cracks will grow, and eventually compromise the structural integrity of the airplane. This condition is known as WFD. It is associated with general degradation of large areas of structure with similar structural details and stress levels. As an airplane ages, WFD will likely occur, and will certainly occur if the airplane is operated long enough without any intervention.

The FAA’s WFD final rule (75 FR 69746, November 15, 2010) became effective on January 14, 2011. The WFD rule requires certain actions to prevent structural failure due to WFD throughout the operational life of certain existing transport category airplanes and all of these airplanes that will be certificated in the future. For existing and future airplanes subject to the WFD rule, the rule requires that DAHs establish a limit of

validity (LOV) of the engineering data that support the structural maintenance program. Operators affected by the WFD rule may not fly an airplane beyond its LOV, unless an extended LOV is approved.

The WFD rule (75 FR 69746, November 15, 2010) does not require identifying and developing maintenance actions if the DAHs can show that such actions are not necessary to prevent WFD before the airplane reaches the LOV. Many LOVs, however, do depend on accomplishment of future maintenance actions. As stated in the WFD rule, any maintenance actions necessary to reach the LOV will be mandated by airworthiness directives through separate rulemaking actions.

In the context of WFD, this action is necessary to enable DAHs to propose LOVs that allow operators the longest operational lives for their airplanes, and still ensure that WFD will not occur. This approach allows for an implementation strategy that provides flexibility to DAHs in determining the timing of service information development (with FAA approval), while providing operators with certainty regarding the LOV applicable to their airplanes.

We have received a report indicating that an operator of a Model 737-300 series airplane reported multiple cracks of the chem-milled steps in adjacent bays of the fuselage crown skin. These cracks were discovered by visual inspection 855 flight cycles after the most recent detailed inspection. The initial visual inspection revealed three cracks varying in length from 1.8 inches to 8.5 inches. Further inspection using ultrasonic phased array revealed nine additional subsurface cracks. The airplane had 55,232 total flight cycles. Multiple adjacent cracks in the fuselage crown skin panels, if not detected and corrected, could link up and lead to decompression or loss of structural integrity of the airplane.

Related Service Information under 1 CFR part 51

We reviewed Boeing Alert Service Bulletin 737-53A1358, dated April 27, 2017. The service information describes procedures for repetitive inspections, replacement, and applicable on-condition actions for certain fuselage crown skin panels. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require accomplishment of the actions identified as "RC" (required for compliance) in the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1358, dated April 27, 2017, described previously, except for any differences identified as exceptions in the regulatory text of this proposed AD.

For information on the procedures and compliance times, see this service information at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0715.

Explanation of Compliance Time

The compliance time for the replacement specified in this proposed AD for addressing WFD was established to ensure that discrepant structure is replaced before WFD develops in airplanes. Standard inspection techniques cannot be relied on to detect WFD before it becomes a hazard to flight. We will not grant any extensions of the compliance time to complete any AD-mandated service bulletin related to WFD without extensive new data that would substantiate and clearly warrant such an extension.

Costs of Compliance

We estimate that this proposed AD affects 200 airplanes of U.S. registry. We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	Up to 507 work-hours X \$85 per hour = \$43,095 per inspection cycle	\$0	Up to \$43,095 per inspection cycle	Up to \$8,619,000 per inspection cycle
Replacement	304 work-hours X \$85 per hour = \$25,840 per skin panel	\$95,000	\$120,840 per skin panel	Up to \$24,168,000

We have received no definitive data that would enable us to provide cost estimates for the on-condition actions specified in this proposed AD.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This proposed AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes to the Director of the System Oversight Division.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

The Boeing Company: Docket No. FAA-2017-0715; Product Identifier 2017-NM-073-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 737-200, -200C, -300, -400, and -500 series airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin 737-53A1358, dated April 27, 2017.

(d) Subject

Air Transport Association (ATA) of America Code 53, Fuselage.

(e) Unsafe Condition

This AD was prompted by an evaluation by the design approval holder indicating that the fuselage crown skin panels are subject to widespread fatigue damage. We are issuing this AD to detect and correct cracking in the fuselage crown skin panels. Multiple adjacent cracks in the fuselage crown skin could link up and lead to decompression or loss of structural integrity of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

Except as required by paragraph (h) of this AD: At the applicable times specified in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-53A1358, dated April 27, 2017, do all applicable actions identified as “RC” (required for compliance) in, and in accordance with, the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1358, dated April 27, 2017.

(h) Exceptions to Service Information Specifications

(1) For purposes of determining compliance with the requirements of this AD, the phrase “the effective date of this AD” may be substituted for “the original issue date of this service bulletin,” as specified in Boeing Alert Service Bulletin 737-53A1358, dated April 27, 2017.

(2) Where Boeing Alert Service Bulletin 737-53A1358, dated April 27, 2017, specifies contacting Boeing, and specifies that action as RC: this AD requires using a method approved in accordance with the procedures specified in paragraph (j) of this AD.

(3) Part 7 of Boeing Alert Service Bulletin 737-53A1358, dated April 27, 2017, specifies post-modification airworthiness limitation inspections in compliance with 14 CFR 25.571(a)(3) at the modified locations to support compliance with 14 CFR 121.1109(c)(2) or 129.109(b)(2). Although Part 7 is identified as RC, this AD does not require accomplishment of Part 7. As airworthiness limitations, these inspections are required by maintenance and operational rules. It is therefore unnecessary to mandate them in this AD. Deviations from these inspections require FAA approval, but do not require approval of an alternative method of compliance.

(i) Terminating Action for Repetitive Inspections

(1) Replacement of a skin panel, in accordance with Part 8 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1358, dated April 27, 2017, except as required by paragraph (h)(2) of this AD, terminates the actions specified in Parts 1, 4, and 6 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1358, dated April 27, 2017, as required by paragraph (g) of this AD, for that replaced skin panel only. To be acceptable as terminating action, the replacement may not be done prior to the applicable time specified in Table 4 of paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-53A1358, dated April 27, 2017.

(2) Completion of a structural repair manual repair to repair cracking, in accordance with Part 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1358, dated April 27, 2017, except as required by paragraph (h)(2) of this AD, terminates the repetitive inspections specified in Part 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1358, dated April 27, 2017, as required by paragraph (g) of this AD, for that repair location only.

(3) Completion of a “Category C repair” to repair cracking, in accordance with Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1358, dated April 27, 2017, except as required by paragraph (h)(2) of this AD, terminates the repetitive inspections specified in Part 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1358, dated April 27, 2017, as required by paragraph (g) of this AD, for that repair location only.

(4) Completion of a “Change Category C Repair to SB Repair,” in accordance with Part 6 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1358, dated April 27, 2017, except as required by paragraph (h)(2) of this AD, terminates the inspections specified in Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1358, dated April 27, 2017, as required by paragraph (g) of this AD, for that repair location only.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Los Angeles ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (k)(1) of this AD. Information may be emailed to: 9-ANM-LAACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Los Angeles ACO Branch, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) Except as required by paragraphs (h)(2) and (h)(3) of this AD: For service information that contains steps that are labeled as RC, the provisions of paragraphs (j)(4)(i) and (j)(4)(ii) of this AD apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. If a step or substep is labeled “RC Exempt,” then the RC requirement is removed from that step or substep. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator’s maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

(k) Related Information

(1) For more information about this AD, contact Jennifer Tsakoumakis, Aerospace Engineer, Airframe Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5264; fax: 562-627-5210; email: Jennifer.tsakoumakis@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Standards Branch, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on July 26, 2017.

Jeffrey E. Duven,
Director,
System Oversight Division,
Aircraft Certification Service.
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